Indiana School Asthma Toolkit

Because asthma is a leading chronic illness among children and accounts for millions of missed days of school, it is important that schools are prepared to deal with an asthma attack and aid children and families in controlling their asthma. This toolkit is designed to provide you with easy access to asthma resources to better serve students with asthma. Several sample forms, information sheets and a resource list are provided. Should you need more information, please contact the State Department of Health Asthma Program at (317) 233-7793.

Comprehensive Asthma Management

A comprehensive asthma management program is made up of a few primary components that can be divided among school staff and implemented to best control asthma among students. It may be helpful to form an asthma team or work with an existing school health team, such as your Coordinated School Health Advisory Council, to help divide the tasks. Administrators often become involved with policy-making, nurses and health care staff may provide trainings for staff and work directly with students on managing asthma, and teachers and maintenance staff are critical to reducing asthma triggers. Additionally, several state and national resources are available to help implement these components and can be found on the following pages.

Components of a Comprehensive Asthma Management Program

1. Policies/procedures for:
    a. Identifying students diagnosed with asthma
    b. Attaining Asthma Action Plans or Individualized Health Plans
    c. Self-administration of asthma medications
    d. Communicating with the child's physician
    e. Communicating with parents

2. Asthma management programs for students with asthma

3. Asthma training for school nurses

4. Asthma training for all school staff

5. Asthma education for all students

6. Environmental control procedures/reduction of asthma triggers (Indoor Air Quality, Integrated Pest Management, etc.)

Table of Contents

Resources for Asthma Education and Management in Schools

Indiana Resources

Indiana State Department of Health Asthma Program

- *School Personnel Knowledge, Behaviors, and Policies Related to Asthma* – report on a survey of Indiana school staff and asthma to determine need and guide development of asthma trainings.
- *Breathe In, Breathe Out: Asthma in Indiana* - semi-annual newsletter available online.
- *The Burden of Asthma in Indiana* (2008) - reports data that describes the burden of asthma on the people of Indiana (prevalence, hospitalizations, mortality, financial impact, etc).
- *A Strategic Plan for Addressing Asthma in Indiana* (2004) - five-year plan establishes goals, objectives and strategies that can be used to improve the health of Hoosiers with asthma.
- *BreatheasyVille* - Web site that offers a virtual town with homes, schools, and other buildings to learn how to recognize and reduce exposure to specific asthma triggers.
- Speaker's Kit – includes all information and tools to present basic asthma information to a community group (PowerPoint slides, discussion guidelines, resources and evaluation tools).
- World Asthma Day Planning Kit[S] – ideas and resources to plan asthma activities for your community or school (May is Asthma Awareness Month and World Asthma Day is the first Tuesday in May).

www.statehealth.IN.gov/programs/asthma

American Lung Association of Indiana

- *Open Airways for Schools*[S] – in-school program for children 8 to 11 years old. Six lessons of 40 minutes each are provided by trained volunteers to help kids control their asthma. Contact Brett Aschliman at (260) 415-9294 or baschliman@lungin.org for more information.
- *Asthma-Friendly Schools Initiative*[S] - assists local communities in planning and implementing comprehensive asthma management programs within their local schools and existing school structure. http://www.lungusa.org/site/pp.asp?c=dvLUK9O0E&b=22590

Allen County Asthma Coalition

Provides *Open Airways for Schools* and attends health fairs and community events. Call (260) 415-9294.

Asthma Alliance of Indianapolis (AAI)

AAI provides asthma in-services for school and early child care staff, educational programs for parents, and environmental assessments for homes and schools in Marion County.
www.asthmaindy.org

Indiana Code 20-33-8-13

Allows students with written documentation from a physician to possess and self-administer medication at school.
www.ai.org/legislative/ic/code/title20/ar33/ch8.html#IC20-33-8-13

Indiana Chronic Disease Management Program[S]

English and Spanish patient-education materials on several topics related to asthma including disease management, medicines, triggers, and school issues.
www.indianacdmprogram.com/Provider/asthma.htm

Knozone

Central Indiana air quality forecasts and information about the health effects of ozone and fine particles.
www.knozone.com

***Smog Watch* from the Indiana Department of Environmental Management**

Provides an easy-to-read forecast of air quality for the different regions of Indiana.
www.in.gov/apps/idem/smog

[S] indicates Spanish materials are available.

Resources for Asthma Education and Management in Schools

Smart School Don't Idle[S] **- Improving Kids Environment and Indianapolis Knozone program**
Provides materials to help implement no idling programs for better air quality at and around your school.
www.ikecoalition.org

Integrated Pest Management [IPM]
Provides general information on IPM, regulations and policies for schools and child care facilities, training opportunities, and additional resources.
www.entm.purdue.edu/entomology/outreach/schoolipm or http://schoolipm.ifas.ufl.edu/

National Resources

Allergy and Asthma Tool Kit for School Nurses
The American Academy of Allergy Asthma & Immunology's Tool Kit offers slide sets for staff presentations and several sample handouts and forms relating to asthma and allergies.
www.aaaai.org/members/allied_health/tool_kit/

Asthma Awareness: Curriculum for the Elementary Classroom
Lessons and activity sheets for grades K-6 that can be integrated into other subjects (science, art, etc.).
www.nhlbi.nih.gov/health/prof/lung/asthma/school/index.htm

***Fit, Healthy, and Ready to Learn: A School Health Policy Guide*, (Part III): Policies on Asthma, School Health Services, and Healthy Environments**
Created by The National Association of State Boards of Education (NASBE) to assist schools in developing policies that aim to prevent chronic diseases.
www.nasbe.org/healthy_schools/FHRTL.htm

How Asthma-Friendly Is Your School?[S] **(¿Su escuela tiene en cuenta a los niños con asma?)**
Seven-item checklist to help identify sources of problems in schools for children with asthma.
www.nhlbi.nih.gov/health/public/lung/asthma/friendhi.htm

Managing Asthma a Guide for Schools
The guide provides specific roles and activities for school personnel in every position to plan and/or maintain an asthma management program. Sample educational materials and resources are also provided.
www.nhlbi.nih.gov/health/prof/lung/asthma/asth_sch.htm

Power Breathing **by the Asthma and Allergy Foundation of America**
An asthma education program for adolescents that can be presented in three or six sessions. Teaches skills for managing asthma especially in social situations. Kit costs approximately $295.
http://www.aafa.org/display.cfm?id=4&sub=79&cont=352

Quest for the Code **by Starlight Starbright Children's Foundation**
Online computer game and network to help 7-15 year olds manage their asthma and connect with others.
http://www.starlight.org or http://asthma.starlightprograms.org/

Tools for Schools
The Environmental Protection Agency's kit to address Indoor Air Quality (IAQ) in schools. Low-cost methods to identify and correct IAQ problems that contribute to asthma.
www.epa.gov/iaq/schools/toolkit.html

[S] indicates Spanish materials are available.

What is Asthma?

- Asthma is a chronic inflammatory lung disease that causes recurrent episodes of cough, wheezing and breathing difficulty.
- During an acute asthma episode, the airway lining becomes inflamed and swollen. Mucus production and muscle spasm further block air flow.
- Over time this process results in tissue damage and chronic airway inflammation.

KEY FACTS ABOUT ASTHMA:

Asthma is one of the most common chronic illnesses among children.

Although asthma cannot be cured, it can be controlled through the use of medications that reduce inflammation and swelling.

Asthma can be controlled more successfully by avoiding "triggers."

Most children with asthma have symptoms that can be prevented or controlled with medicine.

ASTHMA IS CHARACTERIZED BY:

- Airway inflammation: the airway lining becomes red, swollen, and narrow.
- Bronchoconstriction: the muscles that encircle the airway tighten or spasm.
- Airway obstruction: as the airway tightens and narrows, it can be very difficult to get air in and out of the lungs.
- Airway hyperresponsiveness: the muscles that encircle the airway respond more vigorously and quickly to smaller amounts of allergen and irritants.

COMMON SIGNS AND SYMPTOMS OF AN ACUTE ASTHMA EPISODE INCLUDE:

- Coughing
- Wheezing
- Tachypnea (fast breathing)
- Chest tightness
- Fatigue, feeling "out of breath"
- Agitation
- Increased pulse rate
- Allergy-like symptoms (runny nose, watery or itchy eyes, scratchy throat) may or may not be present during an asthma episode.

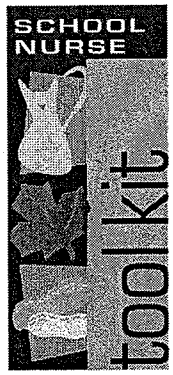
In the school setting, signs and symptoms of an acute asthma episode may also include:

- Coughing, wheezing, or shortness of breath, often during or after exercise.
- Chest or abdominal pain.
- Inability to participate in sports.

During an acute asthma episode, signs and symptoms of increasing respiratory distress or breathing difficulty include:

- Inability to complete a sentence.
- Retractions – increased use of chest, neck, or abdominal muscles (accessory muscles).
- Refusal to lie down – a child may prefer to sit or lean forward in order to make breathing easier.

It is important to remember that not everyone with asthma has the same symptoms. Signs of breathing distress may change as the person gets older.



ASTHMA CLASSIFICATION

Asthma can be classified by frequency and severity of asthma symptoms. Classification also takes into account night time symptoms and peak flow or spirometry measurements.

Classification of Asthma Severity: Clinical Features Before Treatment

	Days with symptoms	Nights with symptoms	PEF % of personal best peak flow
Step 4 Severe persistent	Continual	Frequent	≤ 60%
Step 3 Moderate persistent	Daily	≥ 5 times per month	> 60% - < 80%
Step 2 Mild persistent	3-6 times per week	3-4 times per month	≥ 80%
Step 1 Mild intermittent	≤ 2 times per week	≤ 2 times per month	≥ 80%

Some children may have severe asthma episodes followed by long periods where they are symptom-free.

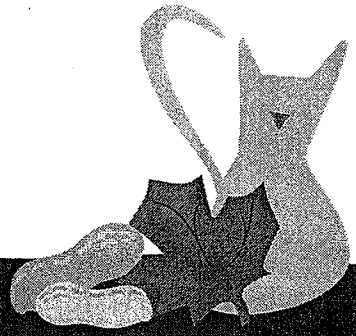
Asthma patterns and classification may change over time, requiring changes in treatment plans.

Patients should be assigned to the most severe step in which **any** feature occurs. Clinical features for individual patients may overlap across steps.

An individual's classification may change over time, or with treatment.

Patients at any level of severity of chronic asthma can have mild, moderate, or severe exacerbations of asthma. Some patients with intermittent asthma experience severe and life-threatening exacerbations separated by long periods of normal lung function and no symptoms.

Patients with two or more asthma exacerbations per week have poorly controlled asthma and need to step up therapy.



ASTHMA TRIGGERS

Anything that causes airway irritation or inflammation leading to asthma symptoms is an asthma trigger. Some common triggers include:

- Tobacco use or second-hand smoke
- Colds or respiratory infections
- Allergic reactions to pollen or mold
- Animal dander from cats, dogs, and other furred animals
- Feathers or feathered animals
- Cockroaches
- Dust, dust mites
- Vigorous exercise
- Exposure to cold air or sudden temperature change
- Air pollution or fumes
- Chalk dust
- Paints
- Cleaning agents
- New furnishings or equipment
- Pesticides
- Strong odors such as dry erase markers, magic markers, perfumes or glue/paste

There are ways to remove potential triggers from the environment:

- Do not allow tobacco use or second-hand smoke.
- Reduce indoor humidity.
- Clean and service heating and ventilation systems regularly.
- Limit outdoor activities when pollen counts are high.
- Keep environment clean and dust free.
- Avoid using strong-smelling cleansers and heavy perfumes.
- Encourage sufficient warm-up before vigorous exercise.
- Have child wear a scarf around his/her face during cold weather.
- Encourage annual flu shots to protect from flu exposure.
- Discourage furred or feathered pets in classrooms.
- Reduce carpet and upholstered furniture in classrooms.

Encourage the child to know what triggers an asthma episode and to avoid exposure to those triggers.

EXERCISE-INDUCED ASTHMA (EIA)

Lifelong physical fitness is an important goal for all students. Unfortunatley, most students with asthma that is not well controlled will experience asthma symptoms after vigorous exercise.

Symptoms of exercise-induced asthma (EIA) include coughing, wheezing, chest tightness, and/or shortness of breath. EIA usually begins during exercise and peaks 5-10 minutes after stopping exercise; it may occur more easily on cold, dry days than on hot, humid days. With today's treatment and management strategies, students can successfully control their asthma and participate fully in physical activities most of the time.

Asthma should not be an excuse to not participate in physical education, sports, or exercise.

There are several actions school personnel can take to facilitate full participation in physical edcuation by students with asthma:

- Make sure the child has an asthma management plan on file. The plan should include any long-term control therapy prescribed by the child's health care provider, as this can reduce the frequency and severity of exercise-induced symptoms.
- Create school policies that make it easy for children with asthma to take medications before exercise as needed.
- If full acitivity is not possible, modify.
- A warm up period before exercise may help.

ASTHMA MEDICATIONS

To keep asthma under control, children often need to take medications. There are two categories of asthma medications – **long term control** medications and **quick relief** medications.

Long Term Control
Used to control and prevent asthma symptoms
Must be taken daily
NOT effective once an episode has already begun

VS.

Quick Relief
Provide quick relief of an acute asthma episode
Used as needed for symptoms and before exercise

LONG TERM CONTROL

Long term control medications control and prevent asthma symptoms. They make the airways less sensitive to triggers and prevent inflammation that leads to an acute asthma episode.

- **Inhaled corticosteroids** — Flovent®, Pulmicort®, QVAR®, Azmacort®, Pulmicort Respules® (only nebulized form), Vanceril®, Beclovent®, Aerobid®, alone or in combination with
- **Long acting bronchodilators (inhaled preferred)** — Serevent®, Foradil®. Other long acting non inhaled bronchodilators include slow release oral albuterol, methylxanthines.
- **Leukotriene modifiers** — Singulair®, Accolate® A pill, not an inhaler, not a steroid.
- **Inhaled nonsteroid anti-inflammatory medications** — Intal®, Tilade®
- **Oral steroids**

QUICK RELIEF

Rescue medications provide relief for acute asthma symptoms.

- **Short acting inhaled bronchodilators** — albuterol, pirbuterol (Maxair®)
- **Oral prednisone burst,** when albuterol alone is ineffective. While not rapid-acting, oral steroids are listed in this context to reflect that they can be used for acute asthma as well as chronic.

Albuterol reverses airway obstruction by relaxing muscles that have tightened around the airways (bronchoconstriction).

Steroids given by mouth decrease inflammation in the airways during an episode, reducing the length and severity of the episode.

The National Asthma Education and Prevention Program (NAEPP) issued an update of selected topics in the Guidelines for the Diagnosis and Management of Asthma in June 2002. The Expert Panel's new recommendations suggest:

- For children with all levels of asthma, inhaled corticosteroids are safe, effective, and the preferred first-line therapy.
- For children with moderate or severe persistent asthma, the use of a long-acting inhaled beta$_2$-agonist in addition to inhaled corticosteroids leads to improvements in lung function, asthma symptoms, reduced supplemental beta$_2$-agonist use, and may eliminate the need to increase the child's inhaled corticosteriods dose to gain asthma control.

The new NAEPP-EPR2 guidelines can be found on the web at http://www.nhlbi.nih.gov/guidelines/asthma/asthsumm.htm

DELIVERY SYSTEMS

There are five common asthma medication delivery systems:

- Metered-dose inhaler (MDI)
- MDI with holding chamber (larger volume spacers with one-way valves)
- Nebulizer
- Dry powder inhaler (DPI)
- Autohaler (breath-activated MDI)

Inhalers work better with holding chambers.

Many children have trouble coordinating the release of medication from their MDI with their breathing.

- A holding chamber device can help children take their inhaled medication more easily and effectively.
- Used properly, MDIs with holding chambers work as effectively as nebulizers. They are less expensive and more convenient, and get students back to class quicker.
- For children who have problems using MDIs, nebulizers are an option.
- Holding chambers should always be used with inhaled steroids (except DPIs).

Help children with asthma manage their medications by:

- Encouraging the child to keep extra inhalers on hand (separate inhalers for school, home, and child care).
- Using spacers as needed to improve inhaled medication delivery.
- Encouraging the child to see their health care provider regularly, as medicine doses or asthma severity may change as the child grows.
- Remembering that the child may need to take inhaled medications before sports or exercise.
- Using a peak flow meter to regularly monitor the child's asthma may be helpful for some children.

ASTHMA ACTION PLANS

A plan is essential in order to take good care of children with asthma. **All children with asthma should have a written asthma management plan or action plan on file at school.**

An asthma action plan should include:

1. Identification of triggers to avoid.
2. Long term control medications when prescribed.
3. Signs and symptoms of an acute asthma episode.
4. An action plan for treating acute episodes.
5. Emergency numbers to call.
6. Best peak flow, or peak flow zones.

Asthma action plans can be guided by:

1. Change or increase in asthma symptoms.
2. Changes in peak flow measurements

RECOGNITION OF INCREASING ASTHMA SYMPTOMS

- Common symptoms of an acute asthma episode include coughing, wheezing, tachypnea (fast breathing), chest tightness, fatigue, agitation, increased pulse rate, or feeling "out of breath."
- Not all children having an asthma episode have symptoms such as cough and wheezing. Some may complain of chest or abdominal pain or trouble breathing.

Normal breathing and pulse rates by age

Age	Breathing rate (awake)	Pulse rate
< 2 months	< 60/minute	< 160/minute
2-12 months	< 50/minute	< 120/minute
12-24 months	< 40/minute	< 110/minute
2-5 years	< 40/minute	< 110/minute
6-8 years	< 30/minute	< 110/minute
9-11 years	< 30/minute	< 100/minute
12-15 years	< 30/minute	< 100/minute
16-18 years	< 20/minute	< 90/minute

PEAK FLOW

Peak flow meters are particularly helpful when a child has been using them regularly at home and knows what his/her "personal best" peak flow is. The peak flow during acute asthma can then be compared to the "personal best" to give an objective idea of the severity of the airway obstruction. The results of a peak flow measurement are very effort dependent, however. A single peak flow measurement, without knowledge of the student's personal best is not as useful, but can be helpful if it is much lower than what is predicted for the child. Peak flow values should be used in conjunction with symptoms and degree of distress in evaluating the severity of the acute asthma.

- A peak flow meter measures how well a child can get air **out** of the lungs.
- A peak flow meter monitors the effectiveness of preventive medications.
- A peak flow helps identify asthma triggers
- A pleak flow helps decide when to seek emergency treatment.
- A drop in peak flow can be an early warning sign of an asthma episode.
- Peak flow readings also assess how the child is responding to asthma treatments.

PEAK FLOW ZONES

Individual "personal best" peak flow measurements can be used to determine asthma action or treatment zones.

Green: 80-100% of "personal best" peak flow. Continue current asthma plan.

Yellow: 50-80% of "personal best" peak flow. **Caution.** Use quick relief medication as needed to improve peak flow or relieve symptoms. Monitor peak flow after treatments.

Red: Less than 50% of "personal best" peak flow. **Danger.** Use quick relief medication and seek immediate medical attention.

ACTION PLAN FOR ACUTE EPISODES

Children with increasing asthma symptoms or decreased peak flow measurements need action. Follow the steps prescribed by the child's health care provider in the asthma action plan.

1. Give the child quick relief medication immediately! Quick relief medications are needed to get control of the acute asthma episode.
2. Help the child to sit in a comfortable position. Children may lean forward to assist breathing.
3. Talk calmly to the child.
4. Encourage deep, slow breathing.
5. Call the health care provider or seek emergency care immediately if any of the following are present:
   - There is no improvement in the child's symptoms within 20-30 minutes of taking rescue medication.
   - The child has trouble walking and talking due to shortness of breath.
   - The child is struggling to breathe.
   - The child's fingernails or lips are turning blue.
   - The child's peak flow measurement is in the red zone.
6. Measure peak flow before and after treatment.

Education and teamwork can improve asthma outcomes. Childhood asthma can be well controlled through education and treatment. Working as a team, school and health care personnel can help children with asthma and their families participate fully in school, sports, and home activities.

RULES OF 2™

When does a child need more than a rescue bronchodilator?

Do you take your quick relief inhaler
More than TWO TIMES A WEEK?

Do you awaken at night with asthma
More than TWO TIMES A MONTH?

Do you refill your quick relief inhaler
More than TWO TIMES PER YEAR®?

If the answer to these questions is yes, a long term controller anti-inflammatory medication may be needed. A long term controller medication can help to improve breathing and prevent asthma emergencies!

Asthma Action Plan

For School or Child Care

Name: _____ **Date of Birth:** _____

Parent/Guardian Name: _____ **Phone:** _____

Parent/Guardian Name: _____ **Phone:** _____

Emergency Contact (1): _____ _____ _____
Name Relationship Phone

Emergency Contact (2): _____ _____ _____
Name Relationship Phone

Physician Name: _____ **Phone:** _____

Other Physician: _____ **Phone:** _____

Asthma Triggers - Identified items which may cause asthma attacks (circle all that apply):

dust mites	strong odors	tobacco smoke	colds/infections
mold	mice/rats	exercise	temperature change
pets	pollen	chalk dust	excitement
cockroach	dust	smoke (other than tobacco)	pesticides

food (specify):_____

other (specify):_____

Activities - that have caused asthma attacks in the past (circle all that apply):

art projects with dust or fumes	playing outdoors on cold/windy days
sitting on carpeting	playing in freshly cut grass
pet care	gardening
wood/kerosene heated rooms	running hard

other (specify):_____

Peak Flow Monitoring

Personal best peak flow reading:_____

Reading to give quick-relief medication:_____

Reading to get medical help:_____

Typical Signs and Symptoms - of asthma attacks (circle all that apply):

persistent cough	flaring nostrils/panting	dark circles under eyes
wheezing	breathing faster	gray or blue lips/fingernails
shortness of breath	grunting	sucking in chest/neck
restlessness	fatigue	trouble talking/walking

Reminders:

1. Notify parents immediately if emergency medication is required.
2. Seek emergency medical care if:
   - there are no improvements 15-20 minutes after initial treatment with mediation and family can not be reached
   - after receiving treatment for asthma symptoms, the child has
     - chest / neck pulled in with breathing
     - gray or blue lips / fingernails
     - trouble talking / walking
     - hunched over

Asthma Action Plan

For School or Child Care

Condition		Medications and Action Steps
GREEN ZONE	**All Clear** • No asthma symptoms • Able to do usual activities • Peak Flow Reading _____ (80% or more of best) **Good Control**	Medicine Amount (dose) When Quick Relief Medicine should not be needed except before exercise and exposure to a known trigger Before exercise and exposure to a known trigger take: _____ (15 minutes before exercise or exposure)
YELLOW ZONE	**Asthma Symptoms** • Coughing, wheezing, tightness in chest, shortness in breath • Usual activities somewhat limited • Peak Flow Reading _____ to _____ • (50-80% of best) **Caution**	Continue taking Green Zone Medicines and ADD: Medicine Amount (dose) When If symptoms persist after one hour or worsen add: Continue with Yellow Zone action for _____ hours Call physician within _____ hours Notify parent and physician when oral steroids are used
RED ZONE	**Danger!** • Very short of breath, trouble walking / talking • Usual activities severely limited • Quick-relief medication has not helped • Peak Flow Reading _____ • (50% of best) **Medial Alert!!**	Continue taking Yellow Zone Medicines and ADD: Medicine Amount (dose) When Start oral steroids if not already Medicine Amount (dose) When Call physician right away! If symptoms do not improve within 15 minutes and physician can not be reached - go to the hospital or call 911 right away
Danger Signs	***Difficulty walking / talking from shortness of breath >>>** ***Bluish / grayish color to palms or lower inner eyelid >>>**	**Go to the hospital now** **Or call 911**

Physician's Signature:_____ **Date:**_____

Parent / Guardian Signature:_____ **Date:**_____

*Based on the National Heart, Lung, and Blood Institute's "Guidelines for the Diagnosis and Management of Asthma" 1997

PERMISSION TO CARRY ASTHMA MEDICINE TO SCHOOL CONTRACT

Please complete and return if you would like your child to carry their asthma medication to school. After completing the form, please return to the school office.

Student:
I agree to keep my asthma inhaler, _____ (medication name), to be used responsibly for my own personal use as directed by my health care provider. I have been instructed in the use of this medicine and will follow my health care provider's directions. I will not share my medicine with any other person. I will tell my teacher if my inhaled medicine does not make my asthma symptoms better. I will tell my teacher when I have taken my medicine. I understand that if I do not follow this agreement, I will lose the privilege of being able to carry my medicine with me. Therefore, I realize that I am responsible for carrying out this contract.

_____ _____
Student Signature Date

Parent:
I agree that _____ (student's name) has been instructed on when and how to appropriately use their asthma medication and is able to do so at school. I believe my child is responsible to self-medicate at school. I understand a label must be placed on the medication that includes the student's name and a copy of the current prescription.

_____ _____
Parent Signature Date

Physician:
I agree that _____ (patient's name) has been diagnosed with asthma, and may require emergency administration of the prescribed medication, _____ (medication name). _____ (patient's name) has been instructed on when and how to use their asthma medication and is able to do so at school. The following are the areas in which the child has been instructed on self-medication:

_____ correct inhaler technique _____ waiting between puffs

_____ spacer use _____ peak flow monitoring

_____ storage of medicine

_____ _____
Physician Signature Date

This contract is valid for the _____ school year. Contract must be filed with the school annually or more frequently to accommodate changes in medication.

PERMISSION TO CARRY ASTHMA MEDICINE TO SCHOOL CONTRACT

In compliance with Indiana Code 20-33-8-13, responsible students with proper documentation are permitted to carry asthma inhalers; however, the student, parents, and health care provider should make this decision after careful consideration.

The following is a list of questions designed to help make this decision.

1. Will the student always remember to bring his/her medicine to school?
2. Will the student refrain from sharing his/her medicine with another student?
3. Will the student tell the teacher whenever he/she takes his/her medicine?
4. Will the student tell the teacher if he/she doesn't get quick relief from taking his/her medicine?
5. Will the student remember to take his/her medicine with him/her to gym classes, field trips, and special events?
6. Does the student really know how and when to take his/her asthma medicine?
7. Does the student need to have his/her medicine with him/her at all times?

If you answered 'no' to any of these questions, self-administration of asthma medication may not be appropriate and you should consider other options. If remembering to bring medicine to school will be an issue, you may consider providing an additional inhaler to be kept permanently at school with the school nurse or teacher.

Indiana Code 20-33-8-13
Possession and self-administration of medication permitted

Sec. 13. (a) Discipline rules adopted under section 12 of this chapter must provide that a student with a chronic disease or medical condition may possess and self-administer medication for the chronic disease or medical condition during the times and in the places set forth under section 14(b) of this chapter if the following conditions are met:

(1) The student's parent has filed an authorization with the student's principal for the student to possess and self-administer the medication. The authorization must include the statement described in subdivision (2).

(2) A physician states in writing that:

(A) the student has an acute or chronic disease or medical condition for which the physician has prescribed medication;

(B) the student has been instructed in how to self-administer the medication; and

(C) the nature of the disease or medical condition requires emergency administration of the medication.

(b) The authorization and statement described in subsection (a) must be filed annually with the student's principal.

As added by P.L.1-2005, SEC.17.

Sample Medication on Field Trip Form

[School Health Office/School Letterhead]
Medications on Field Trip Form

Dear Parent or Guardian,

If it is necessary for your child to take medication during the school-sponsored trip to _____, please send the medication(s) to _____ [name] by _____ (1 week prior to field trip date). The medication(s) should be those that are medically necessary. (Note that medications routinely administered by the nurse will be sent by the nurse.) The medication **MUST BE IN ITS ORIGINAL CONTAINER with your child's name and the dosage and frequency. A health care provider's written order should accompany the medication.** This form must be returned whether or not your child takes medication regularly at school.

Child's Name _____

Medication #1 _____ **Dosage:** _____ **Time:** _____

Frequency: _____ **Special Handling:** _____

Medication #2 _____ **Dosage:** _____ **Time:** _____

Frequency: _____ **Special Handling:** _____

I give permission for my child's teacher or asthma care delegate to administer the above medication if needed as I and/or my health care provider have indicated. I am providing ONLY enough medication for the duration of the field trip.

_____ _____

(Parent/Guardian Signature) (Date)

The following **EMERGENCY** medications (such as an inhaler or an EpiPen) are self-administered, per doctor's written authorization (REQUIRED AND ATTACHED).

Medication: _____

Frequency: _____

Time of Administration: _____

Reason for Medication: _____

If your child needs to carry an **EMERGENCY** medication, inhalers & EpiPens are the only medications a student may be allowed to carry on his/her person—please contact _____ [SN name] to complete an additional required form.

_____ _____

(Parent/ Guardian Signature) (Date)

Source: Adapted from Cottonwood Oak Creek School District #6.

Dear _____:

The school team at _____ school is looking forward to an excellent year for your child, _____. In order to provide the best possible school asthma management for your child, we request your assistance with the following:

Please

1. Obtain an asthma management plan - a physician's/healthcare provider's statement of your child's treatment goals, medication and peak flow plan, and environmental risk reduction measures. Please include guidelines for managing symptoms during special school or off-site events (recess, gym, outdoor play, field trips, parties, art class, etc.). You may use the enclosed Asthma Action Plan.
2. Meet with the school nurse and school administrator – before school entry and as needed – to explain your child's condition, medication, devices and environmental triggers.
3. Submit a Medication Administration form for any medication that is administered in school. Please properly label your child's medications and personally bring them to school. If your child is capable of carrying and administering their asthma medication, please complete and return the enclosed Permission to Carry Asthma Medicine to School Contract.
4. Meet with teachers to set up expectations for maintaining communication and continuity during absences.
5. Prepare your child. Discuss and rehearse the medication plan, how to handle symptoms, triggers, food restrictions, and school policies.
6. Keep the school staff up to date on any changes in your child's asthma action plan.
7. Keep your physician up to date on appropriateness of school services and supports.
8. Participate in advisory committees to support and improve comprehensive school health services and programs.

Thank you for working with us to assist your child.

Sincerely,

_____ _____

Principal School Nurse

Adapted from the National Asthma Education and Prevention Program's Managing Asthma A Guide for Schools. http://www.nhlbi.nih.gov/health/prof/lung/asthma/asth_sch.pdf

AMERICAN LUNG ASSOCIATION®

Date _____

Dear _____, [name of provider]
We are writing about your patient, _____ Date of Birth _____.
The family was asked to schedule an appointment with you. *Parents have provided permission for us to exchange information* (attached or shown below).

The following information is being provided for your information and records.

- ❑ Missed _____ days in _____ period of time, possibly due to asthma.
- ❑ Is not complying with asthma medication at school or the treatment plan you have provided.
- ❑ Is not participating in P.E. because of symptoms related to asthma.
- ❑ Visits school health office frequently because of symptoms related to asthma .
- ❑ Has required emergency management of asthma (e.g., 911, ER referral).
- ❑ Our history and observations reveal that this student's asthma severity has changed (see chart).

	Days w/Symptoms	Nights w/symptoms	Peak Flow % Normal	PEF variability
Severe Persistent	Continual	Frequent	< 60%	> 30%
Moderate Persistent	Daily	> 4 per month	60% to 80%	> 30%
Mild Persistent	> 2 per week	3 to 4 per month	> 80%	20 to 30%
Mild Intermittent	< 2 per week	< 2 per month	> 80%	< 20%

Please help with the following, either before or after the patient's next appointment:

- ❑ Please reassess this child and his/her current medical regimen (See symptoms/severity above).
- ❑ Please send us or update the child's "Asthma Action Plan" (form attached).
- ❑ Please prescribe a Peak Flow Meter. This will allow us to better assist with management at school.
- ❑ Please prescribe a "spacer." This student's technique with MDI was observed and is not adequate.
- ❑ Requires an additional MDI _____ (medication name) at school for optimal availability/safety.
- ❑ Other

_____

Please reach us if there are questions or concerns. Thank you!
Sincerely,

_____ _____

District Medical Consultant/Healthcare Consultant (Printed and signature)

School Nurse (Printed and signature)

School: _____ Ph: (____) _____ Fax: (____) _____
Best days/time:_____

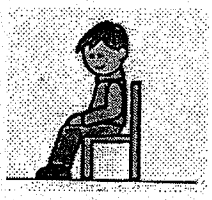
I permit my child's doctor (named above) to communicate with school staff regarding my child's asthma.

Parent's Signature _____ Date_____

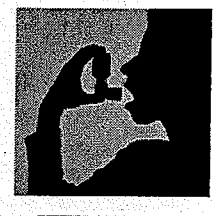
Sample Asthma Emergency Response Poster

Steps to Follow for an Asthma Episode in the School Setting

If student has excessive coughing, wheezing, shortness of breath, or chest tightness:



Help to an upright position; speak calmly and reassuringly, remove from asthma trigger.



Follow individualized action/emergency plan for use of quick-relief inhaler.

If quick-relief inhaler or action/emergency plan not available, send to health office accompanied by staff member, or first aid responder to student.

Get emergency help from school nurse or designated emergency staff if student has any of these:

- Inhaler not helping.
- Breathing hard and fast.
- Nostrils open wide.
- Can't walk or talk well.

CALL 911

If struggling to breathe, ribs show from sucking in to breathe, lips are blue, student losing consciousness, or other signs of severe distress.

Notify parent or guardian.

Adapted from Regional Asthma Community Network, New York State, 2002.

Reducing Asthma Triggers in Schools

Dust mites

- Wash stuffed toys, pillows and rugs in hot water (at least 130°F) weekly.
- Vacuum regularly (high efficiency particulate arresting filter [HEPA] preferred) and remove carpets if possible.
- Clean air filters often.
- Watch out for "reading areas" that often contain all of the items where dust mites like to live (pillows, linens, rugs/carpets and stuffed animals).

Cockroach droppings

- Keep food and garbage in closed containers.
- Limit areas where kids are allowed to have food and drinks.
- Clean crumbs and spills as soon as possible.
- Seal cracks around doors, windows and foundation.
- Kill cockroaches with traps, baits, gels and powders.
- Chemicals and sprays should be used as a last resort as they can cause asthma attacks themselves.
- Implement an Integrated Pest Management [IPM] program

Pet dander

- Do not allow pets with fur or feathers in the classroom.
- Pet dander will come in the classroom on the clothes of children with pets at home, so vacuuming regularly is important.

Mold

- Proper ventilation and air circulation are important to reduce moisture in the air.
- Use a dehumidifier in damp areas and remember to empty the water and clean the container often.
- Keep humidity levels low (between 35% and 50%).
- Fix leaky pipes, faucets, or other water sources.
- Clean moldy surfaces with a detergent and water.
- Absorbent materials like carpet and ceiling tiles will likely need to be removed if they have been wet for 48 hours.

Pollen

- Check pollen and outdoor mold counts at www.aaaai.org/nab.
- Limit outdoor activity and keep windows closed during peak pollen times.

Secondhand tobacco smoke

- Maintain a smoke-free facility.
- Encourage parents that smoke to do outside the home and car. This is important even when the child is not present because chemicals from tobacco smoke stay in hair, clothes, upholstered furniture and other fabrics.
- Staff that smoke should wear a jacket when smoking that can be removed before entering the school or classroom.

Reducing Asthma Triggers in Schools

Air pollution

- Limit outdoor activities, especially physical exertion, and remain indoors when pollution levels are high. An "Air Quality Action Day" is called when pollution levels are unhealthy for sensitive groups, including those with asthma.
- Check for Air Quality Action Days by checking your local newspaper, logging into SmogWatch, www.smogwatch.IN.gov, signing up for automatic notification at the SmogWatch website, or calling 1-800-631-2871.
- Air quality forecasts for central Indiana are also available at www.knozone.com.
- Implement no-idling policies to reduce car and bus exhaust around the school.

Cleaning products and strong odors

- Avoid products with strong odors. Common examples are cleaning products, art supplies, fresh paint, hairsprays, perfumes, and air fresheners.
- If you have cleaning products with strong odors, use them when children are not present.

Cold air

- Try to breathe through your nose.
- Cover your mouth with a scarf or cold-air mask when outdoors.

Exercise

- Warm-up before and cool-down after physical activity.
- Take medicines as prescribed. Physicians may suggest taking a quick-relief inhaler 15 minutes before activity.

Other triggers that can aggravate asthma

- Respiratory infections
- Weather conditions, like freezing weather and high humidity
- Strong emotions
- Certain medications
- Gastroesophageal Reflux Disease (GERD)

The above list is an example of common asthma triggers. There are many potential asthma triggers, but they vary and are unique to each person. Someone with asthma can have one or more of these triggers. It is important to know each child's triggers so you can help him or her avoid or control them.

Data sources: Centers for Disease Control and Prevention, *Asthma FAQ*, 2006; Asthma and Allergy Foundation of America, *Living with Allergic Asthma*, 2006.

National Heart, Lung, and Blood Institute
National Asthma Education and Prevention Program
School Asthma Education Subcommittee

How Asthma-Friendly Is Your School?

Children with asthma need proper support at school to keep their asthma under control and be fully active. Use the questions below to find out how well your school assists children with asthma:

1. Is your school **free of tobacco smoke** all of the time, including during school-sponsored events?

2. Does the school maintain **good indoor air quality**? Does it **reduce or eliminate allergens and irritants** that can make asthma worse?
   Allergens and irritants include pets with fur or feathers, mold, dust mites (for example, in carpets and upholstery), cockroaches, and strong odors or fumes from such products as pesticides, paint, perfumes, and cleaning chemicals.

3. Is there a **school nurse** in your school all day, every day? If not, is a nurse regularly available to the school to help write plans and give guidance for students with asthma about medicines, physical education, and field trips?

4. Can children take **medicines** at school as recommended by their doctor and parents? May children carry their own asthma medicines?

5. Does your school have an **emergency plan** for taking care of a child with a severe asthma episode (attack)? Is it made clear what to do? Who to call? When to call?

6. Does someone **teach school staff** about asthma, asthma management plans, and asthma medicines? Does someone **teach all students** about asthma and how to help a classmate who has it?

7. Do students have **good options for fully and safely participating in physical education** class and recess? (For example, do students have access to their medicine before exercise? Can they choose modified or alternative activities when medically necessary?)

If the answer to any question is no, students may be facing obstacles to asthma control. Asthma out of control can hinder a student's attendance, participation, and progress in school. School staff, health professionals, and parents can work together to remove obstacles and to promote students' health and education.

Contact the organizations listed for information about asthma and helpful ideas for making school policies and practices more asthma-friendly. Federal and State laws are there to help children with asthma.

Asthma can be controlled; expect nothing less.

POWERFUL PRACTICES:
A Checklist for School Districts Addressing the Needs of Students With Asthma

Read the following *Powerful Practices*, and check the column that best describes the status of each practice in your district:

- **NOT YET** – This practice has not yet been addressed in our district.
- **IN PROCESS** – This practice is in development or just beginning in our district.
- **YES** – This practice has been implemented in our district.

This checklist is intended primarily for school administrators, although you may need input from other school district personnel such as nurses, teachers and coaches in order to complete it. It should help your district identify areas in which it is currently doing well, as well as areas in which it may want to focus more energy. Regardless of where your school district is in instituting its asthma management programs, we encourage you and your team to use this checklist periodically to gauge your progress and to identify areas that could use more attention.

Once you have identified program areas in need of more attention within your district's asthma management program, school district leaders may wish to use the Centers for Disease Control and Prevention's "School Health Index: A Self-Assessment and Planning Tool" to help develop an action plan to improve asthma programs and policies. The index can be found at *www.cdc.gov/healthyyouth*.

AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS

	CHECK THE APPROPRIATE COLUMN		
	NOT YET	IN PROCESS	YES
A. Providing School District Leadership			
1. The superintendent is an advocate for asthma management.			
2. Asthma management is recognized by school district leaders as a possible way to improve attendance.			
3. School administrators ensure that asthma education services are culturally, linguistically and in other ways appropriate to the district population.			
4. The board of education has adopted policies to address asthma and other chronic diseases among students, which may include: ☐ Permitting students with a doctor's note and appropriate training to carry inhalers. ☐ Designating a district staff member to coordinate asthma wellness activities. ☐ Assigning asthma wellness roles for school district health-care staff that are consistent with best practices and relevant national standards. ☐ Ensuring that qualified staff members are available to implement asthma action plans and to provide asthma-related health-care services, including quick-relief medication, to children in school or at school-related activities.			
5. District leaders ensure that systems and procedures are in place to collect data about students with asthma, including data about: ☐ Absenteeism. ☐ Visits to the health office. ☐ Non-participation in physical education. ☐ Asthma attacks on campus or at a school activity. ☐ 911 or other emergency calls related to asthma attacks. ☐ Students sent home early because of asthma symptoms.			
B. Identifying and Monitoring Students With Asthma			
1. Designated staff members are trained to identify students with asthma.			
2. At the beginning of each school year, parents or guardians are asked to complete (and regularly update) a form used to identify their child's: ☐ Chronic health problems. ☐ Emergency care needs and history. ☐ Medications. ☐ Health-care providers.			
3. All staff members with direct student contact are informed about the health needs of all students with whom they have regular contact.			
4. Students with asthma have access to pre-exercise preventive medications.			
5. The school nurse provides peak flow monitoring to measure air flow out of the lungs, as well as periodic instruction in and review of inhaler use.			
6. All teachers, coaches and other personnel monitor students with asthma, especially during physical activities.			
7. The school nurse or designee monitors information about absences of children with asthma and refers concerns to attendance personnel or counselors.			

	CHECK THE APPROPRIATE COLUMN		
	NOT YET	IN PROCESS	YES
F. Educating Students			
1. Students with asthma are educated about asthma management, including the proper use of medications and the emergency response procedures.			
2. The district collaborates with local or state organizations to offer asthma education programs such as the American Lung Association's "Open Airways."			
3. Support groups are offered to children with asthma through the school district or cooperation with community volunteers.			
4. School personnel or community volunteers promote schoolwide asthma awareness through activities such as: ☐ Sponsoring a health and wellness day with asthma education. ☐ Integrating asthma education into the health education curriculum. ☐ Distributing asthma educational materials that are culturally and linguistically appropriate to the district population.			
5. Student smoking cessation programs are provided and supported in the school district.			
G. Educating Families and Caregivers			
1. The school district provides families with information about identifying asthma symptoms and triggers (including home environmental factors), as well as about asthma management and actions to take during an asthma emergency.			
2. The district reaches out to those who care for children with asthma before and after school, including parents, guardians, babysitters and siblings.			
3. The district collaborates with community organizations to provide asthma-related education for families and caregivers.			
4. The district regularly holds family health fairs.			
5. The district provides students' families with information about smoking cessation programs.			
H. Communicating With Health-Care Providers			
1. The district develops and provides easy-to-use form letters to help communicate with health-care providers.			
2. The district relays important information about students' health directly to doctors and other health-care providers (with parental permission).			
3. The district fosters open lines of communication between school officials and hospitals, clinics and other care providers.			
4. The district encourages partnerships and collaborations between schools and health-care providers.			
I. Collaborating With the Community			
1. The district encourages school personnel to participate in community asthma coalitions that: ☐ Conduct needs assessments to identify barriers, resources and opportunities to address asthma in the community. ☐ Set a common agenda to address asthma in the community. ☐ Collect data and conduct community research. ☐ Involve the media in increasing the awareness of asthma management. ☐ Support asthma-related legislative initiatives, including the funding of school nurse positions.			

This document was developed by AASA and partners under a cooperative agreement with the Division of Adolescent and School Health of the U.S. Centers for Disease Control and Prevention; grant number U58/CCU820135-01. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Center for Disease Control and Prevention.

	CHECK THE APPROPRIATE COLUMN		
	NOT YET	IN PROCESS	YES
C. Ensuring that Students With Asthma Receive Appropriate Care			
1. The district's asthma management practices are consistent with recognized standards, such as the National Asthma Education and Prevention Program (NAEPP) guidelines.			
2. School personnel ensure that every child with asthma has an asthma action plan that considers the context of the school and is written by a health-care provider.			
3. School personnel ensure that students' school health records are up-to-date and accurate.			
4. After every asthma attack on campus or at a school activity, school personnel review what action was taken and determine whether proper procedures were followed.			
5. Students with symptoms are referred to their primary care providers, or families are helped to locate care and payment sources such as the State Child Health Insurance Program (SCHIP).			
6. Health fairs, school open houses and parent-teacher conferences are used to inform families about SCHIP and other providers and payment sources.			
7. The district seeks reimbursement for services provided at school, such as by obtaining a Medicaid reimbursement code for asthma education and asthma-related services.			
8. The district collaborates with community agencies to help families pay for back-up medications such as inhalers, which are kept by the school nurse or other qualified staff member.			
D. Reducing Environmental Contributors			
1. The district uses the Environmental Protection Agency's "Tools for Schools" toolkit to improve indoor air quality (available at *www.epa.gov/iaq/schools/*).			
2. The district focuses on eliminating mold, mildew and leaks and reduces indoor humidity and dust as much as possible.			
3. The district ensures that bus exhaust fumes do not enter schools or outdoor areas used by students.			
4. The district prohibits furred and feathered animals from classrooms and monitors plants for mold.			
5. The district reduces the amount of carpeting in schools and requires the use of special vacuuming procedures/equipment where carpeting remains.			
6. The district reviews building maintenance procedures periodically, updates them as necessary, and ensures that all maintenance staff is properly trained in these procedures.			
7. School personnel review all requirements in the materials safety data sheets concerning the handling of caustic and other dangerous substances and ensure that the requirements are met.			
8. School personnel regulate the use of potentially dangerous supplies and chemicals, including science and art supplies.			
9. The district ensures that integrated pest management techniques are used on school property.			
10. The district enforces a tobacco-free environment for all students, staff, and visitors on all school properties, in all school vehicles, and at all school-sponsored events – on and off campus.			
E. Educating School Staff			
1. All staff with student contact are trained to identify asthma symptoms, asthma emergencies (including the signs and symptoms of anaphylaxis) and learn the appropriate steps to take in such emergencies.			
2. School nurses or other staff members are trained to implement asthma education programs for children and/or parents and in how to use community volunteers to help carry out these programs.			
3. The district promotes staff awareness of health and wellness through presentations by health professionals, health fairs or other in-service activities.			
4. The district provides and supports smoking cessation programs for school staff.			

Indiana Chronic Disease Management Program

Breathe Easier

"QUICK RELIEF" BRONCHODILATORS

(Quick Relief Medicines)

Common Names

These are some of the common quick relief bronchodilators:

- Ventolin
- Proventil
- Accuneb
- Maxair
- Albuterol
- Xopenex
- Levalbuterol
- Pirbuterol

Action

- The quick relief medicines are fast-acting medicines that help relax the muscles in the bronchial tubes.
- When these muscles tighten, wheezing or whistling sounds can be heard as air moves through the narrowed tubes.
- Bronchodilators relieve wheezing and make breathing easier.

Different Kinds that are Prescribed

- Oral
- Metered dose inhaler
- Dry powder inhaler
- Aerosol

Possible Side Effects

- Shakiness, jitteriness, nervousness, fast heart rate, nausea and vomiting.
- More severe side effects are pounding heartbeat, severe headache, and dizziness. If these things happen, **CALL YOUR DOCTOR IMMEDIATELY.**

Caution

- Your child should not use these medicines more often than every four hours. If your child needs these medicines more often than every four hours, **call your doctor.**
- Use of these medicines every four hours should not continue for more than 24 hours without contacting your child's doctor.
- Using this type of medicine too much may hide a serious condition and lead to very dangerous breathing trouble.

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

Indiana Chronic Disease Management Program

Breathe Easier

INHALED CORTICOSTEROIDS
(Long-Term Controller Medicines)

Common Names

These are some of the common inhaled corticosteroids:

- Azmacort
- Aerobid
- Pulmicort Turbuhaler
- Pulmicort Respules
- Flovent (Note: comes in three strengths- know which one you take)
- Advair (combination Flovent and Serevent)
- QVAR

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

Action

- Prevents and reduces swelling inside the breathing tubes and lessens the amount of mucus in the lungs.
- Anti-inflammatory

Different Kinds that are Prescribed

- Metered Dose Inhaler
- Disc Inhaler
- Aerosol

Inhaled Corticosteroids

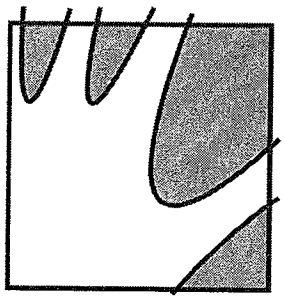
- Safe when taken as ordered and doses are monitored
- May take up to a week to start working
- Must be taken EVERY DAY to work

Possible Side Effects

- Yeast infection in the mouth (thrush)
- Cough
- Hoarse Voice
- Soreness of the mouth or throat
- Slowing of growth
- Eye effects- cataracts. This is very rare and only with high doses.

Important Things to Remember

- To avoid side effects:
  1. **Always** use a spacer device with your metered dose inhaler.
  2. **Always** rinse your mouth after taking your medicine. For older children have them swish the water and spit it out. For infants, give them a bottle to drink.
- Inhaled Corticosteroids are not the same as the "steroids" that some athletes use.
- If your child takes a bronchodilator medicine, give it before the inhaled steroid. This helps the inhaled steroid move into the lungs better. Wait 3-5 minutes after the bronchodilator to give the inhaled steroid.
- **Inhaled steroids are not bronchodilators.** Inhaled steroids do not help right away when a person is having trouble breathing. If wheezing is present, use the bronchodilator and call your doctor.
- **It can be dangerous** to use inhaled steroids alone during an asthma attack (coughing, wheezing, and difficult breathing). **Call your doctor if you are unsure of what to do for your child.**
- If your child is exposed to anyone with chicken pox (and your child has not had chicken pox or the chicken pox vaccine) or breaks out in chicken pox while on steroids, **call your doctor.**



Indiana Chronic Disease Management Program

Breathe Easier

LONG-ACTING BRONCHODILATORS

(Long-Term Controller Medicines)

Common Names

These are some of the common long-acting bronchodilators:

- Serevent (Salmeterol)
- Advair (combination of Flovent and Serevent)
- Foradil

Action

- A bronchodilator is a medicine that relaxes the airway muscles to allow for easier breathing.
- Long-acting bronchodilator medicines help to relax the small airway muscles for about 12 hours.
- They are classified as long-term controller medicines.

Different Kinds that are Prescribed

- Metered dose inhaler
- Diskus inhaler

Possible Side Effects

- Headache, shakiness, nervousness, and fast heart rate.

Comments

- Usually given in the morning and in the evening about 12 hours apart.
- Should not be used more than twice a day.
- **It will not give you immediate relief during an asthma attack.**
- **Albuterol or a short-acting bronchodilator must be used for immediate relief during an asthma attack.**

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

Indiana Chronic Disease Management Program

Breathe Easier

ORAL CORTICOSTEROIDS

(a Long-Term Controller Medicine and can be used as a Quick Relief Medicine)

Common Names

These are some of the common oral corticosteroids:

- Prelone
- Pediapred
- Deltasone
- Prednisone
- Medrol
- Orapred

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

Action

Corticosteroids are strong or potent anti-inflammatory medicines. This medicine reduces swelling inside the breathing tubes and lessens the amount of mucus in the lungs.

Corticosteroids may stop the swelling and inflammation during an asthma attack.

How are they Prescribed

Liquids or tablets to be swallowed (called oral steroids):

- Used in severe asthma attacks - In the yellow or red zone of your asthma action plan.
- May prevent the asthma attack from getting worse.
- May take about 3 to 6 hours or more to start working.
- Are often used for 3 to 7 days or longer.
- Your doctor will tell you when and how to use them. **Do not start this medicine without a doctor's order or recommendation.**
- Have your child take the oral steroid with food or after eating. You can-
- Crush the tablet in ice cream,
- Mix with a tablespoon of milk if your child is not allergic,
- Mix with Carnation Instant Breakfast and sugar,
- Mix with something like cherry juice or chocolate syrup if your child is not allergic.
- Begin taking the oral steroid when it is prescribed. Then take it each day in the morning after breakfast or as directed by your doctor.

Intravenous (medicine given through the vein):

- Used only in a doctor's office, hospital, or emergency room for serious asthma attacks.

Side Effects

Side effects from short-term oral corticosteroids are very limited. If they happen at all, they might involve stomach discomfort, nausea, or mild changes in mood.

Important Things to Remember

Always call your doctor before starting or stopping these medicines.

These corticosteroids are not the same medicine as the "steroids" that athletes use.

When to Call Your Doctor

- If there is no improvement in your child's symptoms within two days after starting the steroid **CALL YOUR DOCTOR.**
- If your child experiences more breathing trouble (coughing, wheezing, tightness, or shortness of breath) at any time **CALL YOUR DOCTOR.**
- **CALL YOUR DOCTOR** before putting your child on another steroid dosage for a new asthma attack.
- If your child is exposed to anyone with chicken pox (and your child has not had chicken pox or the chicken pox vaccine) or breaks out in chicken pox while on steroids, **CALL YOUR DOCTOR.**
- **CALL YOUR DOCTOR** immediately if your child has a severe asthma attack.

Note: While on oral steroids, your child should **not** receive any **live attenuated** vaccinations (oral polio vaccine, chicken pox, or MMR-Measles Mumps Rubella). Other vaccines (such as HIB or DPT) are safe to get while on steroids. Check with your doctor.

Indiana Chronic Disease Management Program

Breathe Easier

Finding Your Personal Best Peak Flow

Your personal best peak flow number is the highest peak flow number you can achieve when your asthma is under good control. Good control is when you feel good and do not have any asthma symptoms.

To find your personal best, take peak flow readings:

- At least twice a day for 2 to 3 weeks.
- When you wake up and between noon & 2:00 pm.
- Before and after you take your medicine for quick relief.

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

PEAK FLOW METER

What it is

A peak flow meter is a device that measures how quickly air can move out of the lungs. During an asthma episode the lungs begin to narrow making it hard to move air in and out of the lungs during breathing.

How it can help you and your doctor

- Catch early airway narrowing hours or even days before symptoms occur (by giving your child medicine early, you may be able to prevent a serious asthma episode).
- Learn what makes your asthma worse.
- Decide if your medicine plan is working well.
- Decide when to obtain emergency care.

How to use

1. Place indicator at zero.
2. Stand up and take a deep breath.
3. Put the meter in your mouth closing your lips tightly around the mouthpiece (do not put your tongue inside the hole).
4. Blow out as hard and as fast as you can.
5. Write down this number.
6. Repeat steps 1-5 two more times.

Write down the highest number in your peak flow diary on the back of this page.

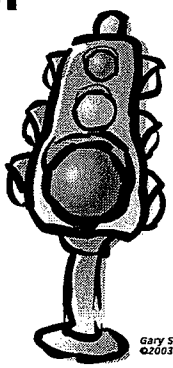
PEAK FLOW ZONE SYSTEM

_____ Personal best peak flow

_____ Green zone (80-100% of personal best)

_____ Yellow zone (50-80% of personal best)

_____ Red zone (0-49% of personal best)



Gary Schmitt ©2003 IU Visual Media

Green Zone - *Good Control*

No asthma symptoms are present. Take your medicines as usual

Yellow Zone - *Caution*

Your airways are becoming swollen and narrowed. Follow your asthma action plan to try to prevent a serious asthma episode. Also, your asthma may not be under good day-to-day control. Call your doctor if you are not in the green zone within 24 hours.

Red Zone - *Medical Alert*

You are having a significant asthma episode. **Use your Albuterol as directed and follow your asthma action plan.** If you do not return to your yellow or green zone within 30 minutes go to the closest emergency room or call your health care provider's office. If, however, you are having signs of severe difficulty breathing **go to the nearest emergency room immediately or call 911 or an ambulance.**

PEAK FLOW DIARY

_____ Personal Best
_____ Green Zone
_____ Yellow Zone
_____ Red Zone

Name _____

MONTH_____

DATE	PEAK FLOW	GREEN	YELLOW	RED
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
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26				
27				
28				
29				
30				
31				

MONTH_____

DATE	PEAK FLOW	GREEN	YELLOW	RED
1				
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11				
12				
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Obtain your peak flow reading every morning before taking your asthma medicines.

If in the yellow zone, follow your yellow zone action plan and repeat peak flow reading 2 or 3 times throughout the day or as needed. Call your doctor's office at _____ if you are not in the green zone within 24 hours.

If in the red zone, follow your red zone action plan and repeat peak flow reading within 30 minutes. If you do not return to your yellow or green zone, go to the emergency room.

Indiana Chronic Disease Management Program

Breathe Easier

CORRECT USE OF METERED-DOSE INHALER

Ask Your Doctor

If you have questions about how to use your metered-dose inhaler, or any other part of your treatment for asthma, be sure to ask your doctor.

Usage

Note: A Metered-Dose Inhaler works best when used with a Spacer.

1. Remove the cap and hold inhaler upright.
2. Shake the inhaler.
3. Tilt your head back a little and breathe out slowly.
4. Hold the inhaler 1 - 2 inches away from your mouth and have your mouth open.
5. Press down on the inhaler to release puff of medicine as you start to breathe in slowly.
6. Breathe in slowly for 3 - 5 seconds.
7. Hold your breath for 10 seconds to let the medicine reach down into your lungs.
8. Repeat puffs as directed by your doctor. Waiting 1 minute between puffs helps the second puff to get farther down into the lungs.

Inhaler Tips

To avoid common inhaler mistakes, follow these tips:

- Breathe out before pressing your inhaler.
- Breathe in through your mouth, not your nose.
- Press down on your inhaler at the start of breathing in.
- Keep inhaling as you press down on the inhaler.
- Press your inhaler only once while you are breathing in- one breath for each puff.
- Make sure you breathe in evenly and deeply.

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

Indiana Chronic Disease Management Program

Breathe Easier

CORRECT USE OF METERED-DOSE INHALER WITH SPACER AND MOUTHPIECE

Ask Your Doctor

If you have questions about how to use your metered-dose inhaler, or any other part of your treatment for asthma, be sure to ask your doctor.

Usage

1. Remove the cap and hold inhaler upright.
2. Inspect the mouthpiece for foreign objects.
3. Shake the inhaler.
4. Push inhaler into rubber end of spacer.
5. Tilt your head back slightly and breathe out slowly.
6. Place mouthpiece in mouth.
7. Press down on the inhaler to release puff of medication as you start to breathe in slowly.
8. Breathe in slowly (3 to 5 seconds).
9. Hold your breath for 10 seconds to allow the medicine to reach deeply into your lungs.
10. Repeat puffs as directed. Waiting 1 minute between puffs helps the second puff to get farther into the lungs.

Inhaler Tips

To avoid common inhaler mistakes, follow these tips:

- Breathe out before pressing your inhaler
- Inhale slowly.
- Breathe in through your mouth, not your nose.
- Press your inhaler only once while you are inhaling (one breath for each puff)
- Make sure you breathe in evenly and deeply.

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

Indiana Chronic Disease Management Program

Breathe Easier

CORRECT USE OF METERED-DOSE INHALER WITH SPACER AND MASK

Ask Your Doctor

If you have questions about how to use your metered-dose inhaler, or any other part of your treatment for asthma, be sure to ask your doctor.

Usage

1. Remove the cap and hold inhaler upright
2. Inspect the mouthpiece for foreign objects.
3. Shake the inhaler
4. Push inhaler into rubber end of spacer.
5. Place soft mask on face covering the mouth and nose.
6. Keep mask firmly against face so that no air escapes around it. Your child is able to easily breathe through the mask.
7. Press down on inhaler to release puff of medication
8. Continue to hold mask firmly against your child's face while he/she breathes at least six times.
9. Wait 1 minute and repeat puff if directed. The waiting time helps the second puff get farther into the lungs.

Inhaler Tips

To avoid common inhaler mistakes, follow these tips:

- If your child is scared of the mask, let him/her hold it or rub it on his/her cheek.
- If your child cries during the treatment, he/she will still receive the medicine as long as the mask is firmly against his/her face with no air escaping.
- It may be necessary to hold your child's arms down to keep him/her from pulling the mask away from his/her face.

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

Indiana Chronic Disease Management Program

Breathe Easier

CORRECT USE OF AEROSOLIZED MEDICATIONS

Use the Correct Equipment

It is important to remember that children will need different equipment at different stages. Make sure you have the correct size mask or mouthpiece as your child grows.

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

Aerolized Medications

An aerosolized medication is a liquid medicine that has been changed into a fine mist. The child breathes this fine mist into his/her lungs.

A small air compressor, called a nebulizer machine, is used to change the liquid into a mist. The homecare company of your choice will provide this machine for you and will teach you how to use it and care for it.

General steps for aerosol treatment

1. Plug in machine.
2. Connect tubing to machine nozzle.
3. Place medication in nebulizer cup.
4. Place mask or mouthpiece on nebulizer cup.
5. Connect tubing to bottom of nebulizer cup.
6. Turn compressor on.
7. Breathe in mist until nebulizer cup is empty. This may take up to 15 minutes.
8. Encourage slow deep breathing to allow the medication to go deeper into the lungs.

Helpful Hints

1. Babies and young children breathe through a mask that directs the medicine to the nose and mouth. Older children use a mouthpiece to inhale the medicine.
2. The masks and mouthpieces are available in many sizes. Be sure to obtain the correct size of equipment for your child.
3. Young children may not want to sit quietly during these aerosol treatments. It may be helpful to have them watch television, read a book, or sing a song.
4. It is best to finish an aerosol treatment even if your child is resisting the treatment. Your child needs to know that this medication is important and that you will give it regardless of his/her actions. Your child should eventually become comfortable with the aerosol treatments.

Indiana Chronic Disease Management Program

Breathe Easier

CORRECT USE OF DISKUS INHALER

1. Place thumb on thumb grip and push away to uncover mouthpiece.
2. Thumb grip will snap into position.
3. Hold diskus in a level position with mouthpiece toward you.
4. Slide lever until it clicks. Your medication dose is now ready.
5. Breathe out slowly.
6. Place mouthpiece to your lips and breathe in steadily and deeply.
7. Hold your breath for 10 seconds to allow the medicine to reach deeply into your lungs.
8. Repeat puffs as directed. Repeat from Step 4.

Marty Williams
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Ask Your Doctor

If you have questions about how to use your diskus inhaler, or any other part of your treatment for asthma, be sure to ask your doctor.

For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.

Indiana Chronic Disease Management Program

Breathe Easier

CORRECT USE OF PULMICORT TURBUHALER

1. Remove cap.
2. Inspect mouthpiece for foreign objects.
3. Twist the grip fully to the right, then fully to the left while holding upright.
4. You will hear a click.
5. Breathe out slowly.
6. Close mouth tightly around mouthpiece.
7. Breathe in rapidly and deeply.
8. Hold your breath for 10 seconds to allow the medication to reach deeply into your lungs.
9. If repeat inhalation needed, repeat from Step 3.

Ask Your Doctor

If you have questions about how to use your Pulmicourt Turbuhaler, or any other part of your treatment for asthma, be sure to ask your doctor.

Marty Williams
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For further information contact the Indiana Chronic Disease Management Program at *www.indianacdmprogram.com* or call your doctor.